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report on the Meopta optical instruments plant in Bratislava, which is described as producing mainly optical devices for the armed forces. The report includes a description and sketch of the plant layout, a description of management, production, and raw materials used, and a description of the products. A sketch with legend shows an electric control device called a K device which is used for firing machine guns from aircraft.

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"MEOPTA" WORKS AT BRATISLAVA, CZECHOSLOVAKIA

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Location

The "Meopta" mechanical engineering plant in Bratislava is located north of Marsala Malinvskeho Ulica and Palarkova Ulica, between Karpatska Ulica and Jelenia Ulica.

Plant Buildings

1. Building 2-6 -- A one-story masonry structure, 60X40 meters in size, which houses the following things: gatekeeper's quarters, women's wash room, men's wash room, storeroom for precious metals, metal plates, steel, etc., and inspection department for finished products where Zeiss brand equipment is inspected.

2. Masonry building which constitutes a single block together with buildings 7-12. The entire block is one story high, except for building 7, which is three stories high and is 70X40 meters in size. At the center of this block of buildings there is a courtyard (9) which is accessible by an underpass (11).

3. Building 7 -- This building houses the optical instruments production department. The assembly room for all finished products is located on the ground floor. The department employs 25 persons working in two daily shifts. Its machinery consists of the following items:

Two mechanical milling cutters for precision gears.

Six mechanical lathes (one Volman and five Boley).

One old table-type boring machine.

One hand-operated assembly press.

Vices

Assembly work benches.

4. Building 10 -- Precision parts for assembly are produced in this building, where about 30 persons work in two daily shifts. It has not been

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ascertained whether this department has any machinery besides drawing tables. In this building are made the necessary designs and sketches, which subsequently are sent to the materials departments in buildings 17 and 18.

5. Building 14 -- Kitchen and canteen.
6. Building 15 -- Dwellings for 10 families of plant employees.
7. Building 16 -- Medical office and infirmary
8. Buildings 17-18 -- Materials departments. They also house the offices which prepare purchase orders for the materials needed for the plant's production activities.

Ministerial Jurisdiction and Personnel

The plant is under the direction jurisdiction of the Ministry of Heavy Industry in Prague, and under the direct and continuing control of the Ministry of Defense.

Plant manager is Kovacik, Czech; security officer, Motovsky, Czech; assembly department head, Lukac, Slovak; in charge of storage facilities, Halmo, Hungarian; manufacturing department head, engineer Pekete, Hungarian; chairman of the board (consisting of six members), Knier, Slovak.

The plant employs 700 persons, 20 percent of whom are women, working in three daily shifts.

Production

The "Meopta" plant is engaged for the most part in armament production. It is inspected weekly by Czechoslovak Army officers. The plant contains the following administrative departments:

1. Optical department.
2. Machine shops department.
3. Processing sheds department.
4. Manufacturing department.
5. Assembly department.

The following items are produced:

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1. K Devices

These are electric control-devices for firing machineguns from aircraft. They are manufactured exclusively on orders from the "Lenin" plants at Pilsen and Dubnica nad Vahom. The designs for their manufacture are brought to the plant by armed forces personnel, who deliver them from the abovementioned "Lenin" plants. The finished items are likewise delivered by armed forces personnel, who come to the plant to receive them once per month. Until May 1954, the plant produced 8 such devices per week. Since then, it has had to raise this output to 15 units per week. At the plant these devices undergo only waterproof and resistance tests. They are given the heat test subsequently by military personnel at special plants.

A major portion of the component parts of these devices were copied from similar German devices. Their mechanical parts are of recent make.

In general, the K device may be described as follows: the container is 45X30 centimeters, is made of steel, and is waterproof (see attached sketch No. 2).

Before the device can be put into operation, it is necessary to raise it. This is done by giving it, by hand, a complete 360-degree turn. As the device is raised, the control mechanism is inserted. Following this, the stop mechanism of the upper rotating disk lifts automatically and causes the current to pass through. The traction spring, by which the rotating disc is caused to go into a rotating motion, guided by a double cord of catgut, also pulls the contact gear which, by means of its 32 contacts, emits impulses of current which are carried by a cable to the trigger mechanism of the machine guns. All the electric wires of the device are insulated, of different colors, and numbered. The rate of firing is regulated by an electromagnetic mechanism in such a way that not less than 4 and not more than 16 rounds per second may be fired.

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Upon completion, the K devices are tested at the plant itself by being connected to a switchboard with 32 incandescent lamps which represents the trigger mechanism of the machine guns. The voltage of the current is about 3.5 volts.

Production of the K device requires the following raw materials: tombac contacts; silver steel; steel for springs; steel for screws; aluminum; copper; "gumoit" fabric; ordinary steel; insulated copper wire; insulating material.

The K device consists of the following components:

a. Control mechanism, consisting of 30 component parts.

b. Contact gear for activating the trigger mechanism; has 32 silver-plated contacts. A 0.2-mm copper wire is attached to each of these contacts. According to their function, these wires are covered with insulating material of three different colors (yellow, red, and green). The gear consists of two rings, each 80 millimeters in diameter and 4 millimeters thick. These rings are made of "gumoit," a product of the "Gumon" plant, located in Bratislava. Around these rings there is an aluminum toothed rim. At the center of the contact gear there is a copper ring.

c. The magnet is fixed onto a steel plate by three 6-mm screws. The magnet is 60x40x20 millimeters. Between its two poles there is a bobbin at the center of which there is an opening containing a needle that is held in place by magnetic force. The bobbin completes 1,200 revolutions per minute. The needle is connected to the lower section of the magnet so as to be able to cause a large number of revolutions.

2. Apparatus for the Reproduction of Microfilms

Such apparatus are produced at the rate of 30 units per month. They are produced only in sufficient quantity to satisfy national demand.

3. Optical and Measuring Instruments for Cannon

Production of new instruments is limited. To some extent, only repair work is done on old instruments which are brought to the plant by military personnel belonging to the Bratislava garrison. About an average of 300 of these instruments are repaired each month.

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4. Field Glasses

The plant manufactures 6X30 field glasses, almost exclusively for the armed forces.

5. Optical Lenses

The plant produces about 400 such lenses per month. It has not been possible to obtain further data on this subject.

6. Compasses

The compasses produced by the plant are almost exclusively for the armed forces. Immediately upon completion, they are picked up by military personnel belonging to the Bratislava garrison.

7. Photographic Apparatus

Such apparatus are produced as the need arises and only as samples.

8. Automatic Apparatus for the Production of Incandescent Lamps

Such apparatus are given the designations T-28 and NZ-24. They are copied from automatic apparatus made by [redacted] The apparatus produced by "Meopta" are exclusively for Czechoslovak consumption and are supplied to the firm "Tesla." They are produced at the rate of only one unit every 2 months. This slow rate of production is to be attributed to poor designs and errors in computation.

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Procurement of Raw Materials

The following raw materials are used at the plant:

1. Anticorrosive [? "anticoro"] steel for the production of the various component parts; supplied by the "Poldi" steel plant.
2. Special steel the containers of K devices; supplied by the "Poldi" steel plant.
3. Insulating material; supplied by the "Gumon" plant of Bratislava.
4. Ball bearings; old stocks of [redacted] bearings have been used until now.
5. Bronze for bearings, silver and tombac for contacts, aluminum and special steel for special gears, and insulated wires; supplied by Czechoslovak firms.

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6. Electric power; supplied by the Tarnava power plants in Western Slovakia.

7. Gas; supplied by the gas storage installation in Bratislava.

Protection and Security

The "Meopta" plant has only 28 guards, under the command of plant militia commander Strakos, a Slovak. The guards are armed with N-98 carabines and caliber 9 pistols. They engage every 2 weeks in target practice at the Ivanka-Bratislava airfield.

Legend for Sketch No. 1 ("Meopta" Plant)

1. Main entrance
2. Gatekeeper's quarters
3. Women's wash room
4. Men's wash room
5. Storeroom for materials
6. Finished products inspection department
7. Assembly department and assembly department for optical apparatus
8. Machine shops
9. Courtyard
10. Workshops department
11. Underpass
12. Offices
13. Production preparation department
14. Kitchen and mess hall
15. Employees' dwellings
16. Medical office and infirmary
- 17 and 18. Materials department
19. Flower garden
20. Courtyard
- 21 and 22. Entrances for motor vehicles
23. Hydrant

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Legend for Sketch No 2 (K Device)

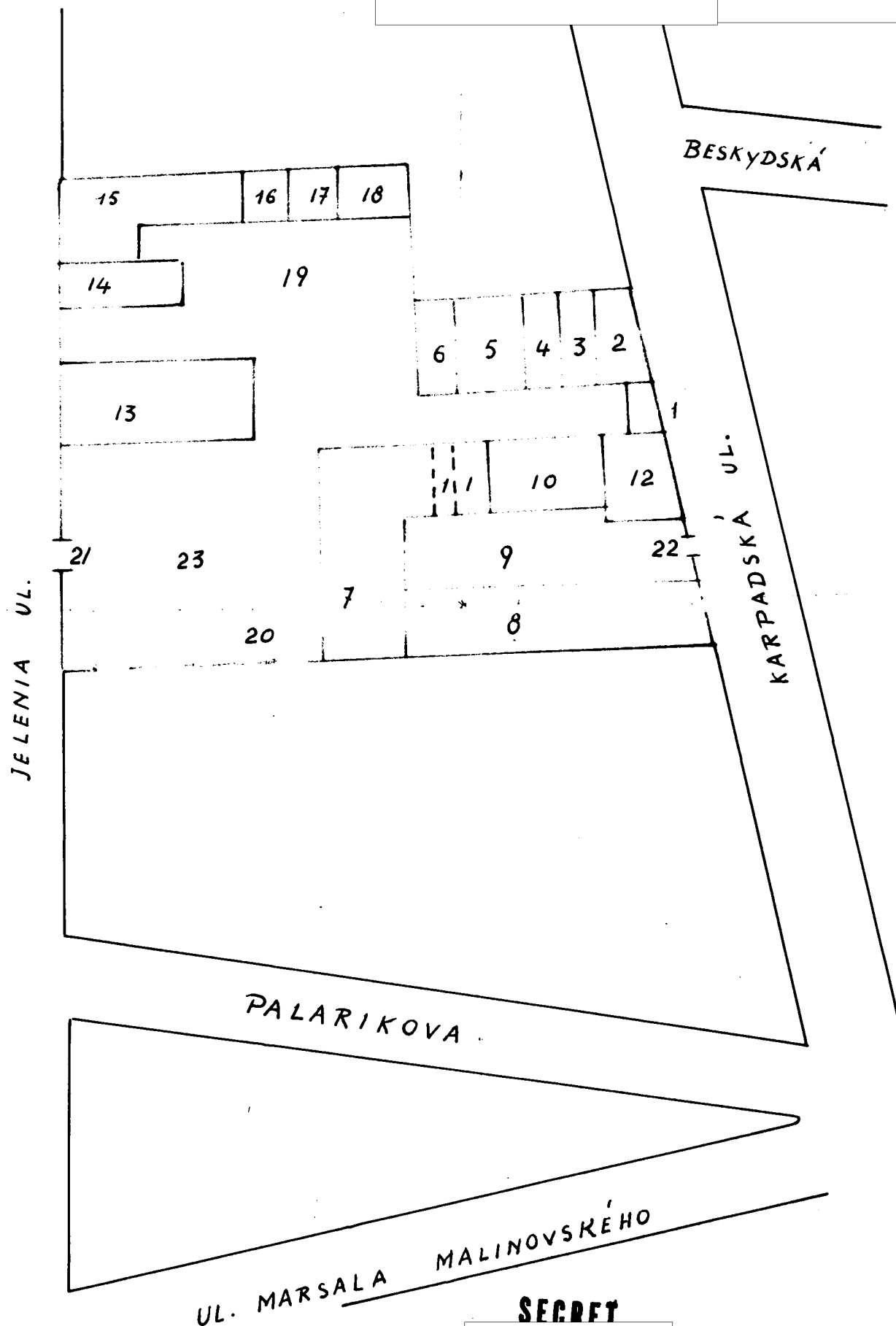
1. Opening mechanism
 2. Contact gear -- It consists of two aluminum sprocket wheels insulated from top to bottom by insulating rings made of "gumoit" fabric. The lower sprocket wheel has 32 silver-plated contacts fixed by copper rivets. The upper sprocket wheel carries the current and has a brass ring which rotates fully and acts as a contact.
 3. Electromagnetic braking mechanism.
 4. Switch mechanism
 5. Cable connected to the container by means of metal brackets. The cable is insulated by a special insulating mass.
 6. Regulating segment for the magnetic needle.
 7. Copper guide rolls.
 8. Traction spring.
 9. Contacts. The contacts are made of tombac; the bridge is made of "gumoit" fabric. The bridge is fixed onto the container by means of four M-4 screws. The ends are equipped with silver-plated, riveted contacts.
 10. Magnetic needle.
 11. Switch. The entire switch mechanism is fixed onto a 5-mm plate by means of two M-6 screws. The switch consists of a silver-steel axle onto which is fixed an eccentric made of ordinary steel. Another component of the switch mechanism is the stop spring, made with 1-millimeter thick steel for springs. On the quadrangular extension of the axle there are two eccentrics mounted outside the insulating mass, which serve respectively for a change of connection (switching). The stop spring is held in place by two M-4 screws. The entire switch mechanism is installed in a small steel box.
- A. Aluminum sprocket wheel
 - B. Silver-plated contacts
 - C. "Gumoit" ring
 - D. Copper ring

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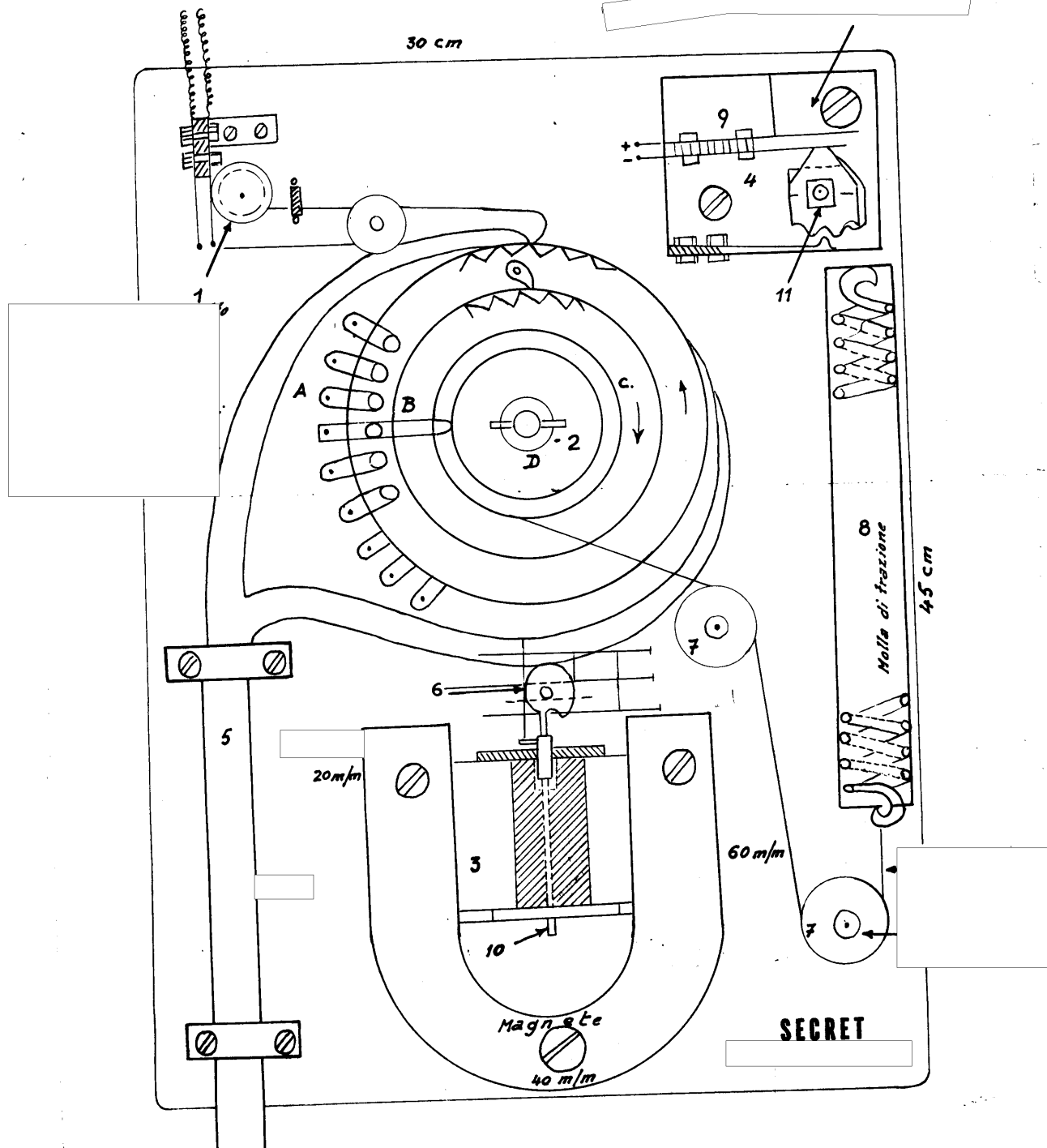
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